

What is claimed is:

1. A method for operating a cardiac rhythm management device, comprising:  
sensing rate and synchronized heart chambers through separate channels and  
5 generating sense signals upon detection of depolarization occurring in a chamber; and,  
pacing the synchronized chamber in accordance with a synchronized pacing mode  
based upon rate chamber events wherein pacing of the synchronized chamber is inhibited  
during a synchronized chamber protection period that is initiated by a synchronized  
chamber sense or pace.

10 2. The method of claim 1 further comprising pacing the rate chamber in accordance  
with a bradycardia pacing mode based upon rate chamber senses and paces;

15 3. The method of claim 1 wherein right and left ventricles are the rate and  
synchronized chambers, respectively, and the synchronized chamber protection period is  
a left ventricular protection period.

20 4. The method of claim 1 wherein the paired atria are the rate and synchronized  
chambers.

25 5. The method of claim 1 further comprising pacing one or more additional  
synchronized pacing sites in accordance with a synchronized pacing mode based upon  
rate chamber events and wherein pacing of each synchronized site is inhibited during a  
synchronized chamber protection period that is initiated by a sense or pace at the  
synchronized site.

6. The method of claim 2 wherein the synchronized pacing mode is an offset  
synchronized pacing mode.

30 7. The method of claim 2 wherein the synchronized pacing mode is a synchronized  
chamber-only synchronized pacing mode.

8. The method of claim 7 further comprising delivering a safety pace to the rate chamber if the synchronized chamber pace is inhibited by the synchronized chamber protection period.

5

9. The method of claim 2 wherein the synchronized pacing mode is a triggered synchronized pacing mode.

10. The method of claim 9 wherein a pace to the synchronized chamber may be triggered by a synchronized chamber sense and wherein the synchronized chamber protection period starts only after a specified delay from such a triggering event, which allows triggered pacing but prevents pacing during the vulnerable period of the synchronized chamber.

11. A cardiac rhythm management device, comprising:  
 sensing channels for sensing depolarizations from heart chambers designated as a rate chamber and a synchronized chamber;  
 a controller for controlling the delivery of paces in accordance with a programmed pacing mode; and,  
 wherein the controller is programmed to pace the synchronized chamber in accordance with a synchronized pacing mode based upon rate chamber events and wherein pacing of the synchronized chamber is inhibited during a synchronized chamber protection period that is initiated by a synchronized chamber sense or pace.

12. The device of claim 11 further comprising a pacing channel for delivering paces to the rate chamber and wherein the controller is programmed to pace the rate chamber in accordance with a bradycardia pacing mode.

13. The device of claim 11 wherein right and left ventricles are the rate and synchronized chambers, respectively, and the synchronized chamber protection period is a left ventricular protection period.

14. The device of claim 11 wherein the paired atria are the rate and synchronized chambers.

5 15. The device of claim 11 further comprising channels for pacing one or more additional synchronized pacing sites in accordance with a synchronized pacing mode based upon rate chamber events and wherein pacing of each synchronized site is inhibited during a synchronized chamber protection period that is initiated by a sense or pace at the synchronized site.

10 16. The device of claim 12 wherein the synchronized pacing mode is an offset synchronized pacing mode.

15 17. The device of claim 12 wherein the synchronized pacing mode is a synchronized chamber-only synchronized pacing mode.

18. The device of claim 17 further comprising delivering a safety pace to the rate chamber if the synchronized chamber pace is inhibited by the synchronized chamber protection period.

20 19. The device of claim 12 wherein the synchronized pacing mode is a triggered synchronized pacing mode.

25 20. The device of claim 19 wherein a pace to the synchronized chamber may be triggered by a synchronized chamber sense and wherein the synchronized chamber protection period starts only after a specified delay from such a triggering event, which allows triggered pacing but prevents pacing during the vulnerable period of the synchronized chamber.

21. A method for operating a cardiac rhythm management device, comprising:  
sensing a heart chamber through a sensing channel and generating sense signals  
upon detection of depolarization occurring in the chamber; and,

5 pacing the chamber asynchronously at a selected rate, but wherein pacing of the  
chamber is inhibited during a protection period that is initiated by a pace or sense in the  
chamber.

22. The method of claim 21 wherein the heart chamber is a ventricle.

10 23. The method of claim 22 wherein the heart chamber is an atrium.

24. The method of claim 21 wherein the selected pacing rate is varied in accordance  
with measurements from an exertion level sensor.